Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method of storing data in a grid-based data storage system comprising:

defining an array of consecutive equal capacity data storage units, each data storage unit defined as a grouped plurality of data storage blocks from separate storage domains; and

allocating each of the two or more adjacent data storage units in the array for storing either user data entirely or and at least one data storage unit in the array for storing fault tolerance data entirely.

2. (Previously presented) The method of claim 1 further comprising aligning a base address of each data storage unit allocated for storing user data with an address defined by a multiple of a size of the storage blocks.

3. (Previously presented) The method of claim 1 further comprising defining a pointer that identifies a selected data storage unit.

4. (Previously presented) The method of claim 1 wherein the fault tolerance data is characterized as either mirror data or parity data.

5. (Canceled)

2

6. (Canceled)

7. (Canceled)

8. (Previously presented) The method of claim 1 further comprising defining a sparing table that designates at least one data block in each row of said array as a spare data block.

9. (Previously presented) The method of claim 8 further comprising defining said sparing table to contain a plurality of sparing versions that each specify a different storage domain as containing said at least one spare data block in each row.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Previously presented) The method of claim 1 further comprising creating a metadata entry that identifies each data storage unit and the respective array of a plurality of arrays in which each data storage unit exists.

14. (Previously presented) The method of claim 13 wherein said metadata entry further comprises an entry indicating a storage format of each data storage unit.

3

15. (Canceled)

16. (Currently amended) A grid-based data storage system comprising an array of ~~consecutive~~ equal capacity data storage units, each data storage unit defined as a grouped plurality of data storage blocks from separate storage domains, wherein two or more adjacent each data storage unit is individually units of the array are allocated for storing either user data entirely ~~or~~ and at least one data storage unit of the array is allocated for storing fault tolerance data entirely.

17. (Previously presented) The data storage system of claim 16 further comprising a plurality of spare storage blocks that are allocatable for storing data in the respective data storage units.

18. (Previously presented) A method of storing data in a grid-based data storage system comprising:

defining an array of equal capacity data storage units, each data storage unit defined as a grouped plurality of data storage blocks from separate storage domains;

allocating each of the data storage units for storing either user data entirely or fault tolerance data entirely in accordance with a selected first storage format; and

reallocating the data storage units for storing either user data entirely or fault tolerance data entirely in accordance with a selected second storage format if the number of data storage units in the first storage format is less than or equal to the number of data storage units in the second storage format.

4

19. (Previously presented) The method of claim 18 further comprising:

defining a second array of equal capacity data storage units, each data storage unit

defined as a grouped plurality of data storage blocks from separate storage

domains; and

allocating additional data storage units in the second array if the number of data

storage units in the first storage format is greater than the number of data storage

units in the second storage format.

20. (Previously presented) The method of claim 18 comprising:

determining the data storage format of said array;

identifying an inaccessible storage domain;

accessing a sparing table that specifies at least one spare data block in each row of

said array;

accessing metadata corresponding to said data storage format that specifies the

location and content of each data block in said array; and

regenerating or copying data corresponding to each non-accessible data storage block

to the respective spare data block.

21. (Previously presented) A data structure having an array of equal capacity data

storage units, each data storage unit defined as a grouped plurality of data storage blocks

from separate storage domains, the data structure comprising a pointer that when multiplied

by a storage capacity of said data storage blocks and by the number of rows of data storage

5

units allocated for storing user data, and to which an offset, if any, is added, produces a base address in each storage domain.

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Previously presented) A method of accessing data in a data storage system comprising:

defining an array of equal capacity data storage units, each data storage unit defined as a grouped plurality of data storage blocks from separate storage domains;

determining a domain and a physical address for at least one data storage block by applying an array pointer value to determine a base address of said array, applying a data storage unit pointer value to determine at least one domain to be accessed and to determine a row such that the row number minus one is multiplied by a capacity of said storage blocks and added to a base address to produce a physical address; and

issuing an access command to said at least one domain that includes said physical address.

26. (Canceled)

6

27. (Previously presented) The data storage system of claim 16 wherein the data storage blocks are of equal capacity.

28. (Previously presented) The data storage system of claim 16 wherein within a particular row, a data storage block in a first domain has the same logical address as a data storage block in a second domain.

29. (Previously presented) The data storage system of claim 16 wherein the array is adapted for storing data in the data storage blocks in a selected storage format by predetermined arrangements of user data, mirror data, and parity data associated with each of a plurality of selectable storage formats.

30. (Previously presented) The data storage system of claim 29 wherein the predetermined arrangement defines at least one row in the array that contains no mirror or parity data in the data storage blocks.

31. (Previously presented) The data storage system of claim 30 wherein the array is adapted for storing data in a RAID 5 or RAID 6 storage format.

32. (Previously presented) The data storage system of claim 16 further comprising metadata defining a pointer for identifying a selected data storage unit.

7

33. (Previously presented) The data storage system of claim 16 wherein a base address of each data storage unit allocated for storing user data is aligned with an address defined by a multiple of a size of the storage blocks.

34. (Previously presented) The data storage system of claim 16 wherein the fault tolerance data comprises either mirror data or parity data.

8